

## CLAIMS

What is claimed is:

1. A bicomponent fiber wick for use in processing an analyte fluid, the bicomponent fiber wick comprising:  
a self-sustaining, fluid transmissive body comprising a plurality of bundled, crimped, bicomponent fibers bonded to each other at spaced apart contact points, each bicomponent fiber having a fiber structure comprising a first fiber component formed from a polyamide material and a second fiber component, the fibers collectively defining tortuous fluid flow paths through the fluid transmissive body, the fiber structure being configured for controlling flow of the analyte fluid through the fluid transmissive body with at least a portion of the first fiber component in contact with the analyte fluid.
2. A bicomponent fiber wick according to claim 1 wherein the polyamide material is selected from the group consisting of nylon 6, nylon 6,6, nylon 4, nylon 6,10, nylon 11, and nylon 12, and copolymers thereof.
3. A bicomponent fiber wick according to claim 1 wherein the second fiber component comprises at least one of nylon 6, nylon 6,6, polyethylene terephthalate, polybutylene terephthalate, polypropylene terephthalate, polylactic acid, polypropylene and polyethylene.
4. A bicomponent fiber wick according to claim 1 wherein the bicomponent fibers are self-crimped.
5. A bicomponent fiber wick according to claim 1 wherein the first fiber component forms a continuous bicomponent fiber sheath along the length of the bicomponent fiber and the second fiber component forms a continuous bicomponent fiber core surrounded by the sheath.
6. A bicomponent fiber wick according to claim 1 wherein the fiber structure is adapted to provide a predetermined polyamide component ratio.

7. A bicomponent fiber wick according to claim 6 wherein the predetermined polyamide component ratio is in a range of about 0.10 to about 0.50.
8. A bicomponent fiber wick according to claim 6 wherein the predetermined polyamide component ratio is in a range of about 0.20 to about 0.35.
9. A bicomponent fiber wick according to claim 6 wherein the predetermined polyamide component ratio is in a range of about 0.25 to about 0.30.
10. A bicomponent fiber wick according to claim 1 wherein the analyte fluid is one of urine, blood, serum and saliva.
11. A bicomponent fiber wick for use in processing an analyte fluid, the bicomponent fiber wick comprising:
  - a self-sustaining fluid transmissive body formed from a plurality of bundled, self-crimped, bicomponent fibers bonded to each other at spaced apart contact points, each bicomponent fiber having a fiber structure comprising a continuous thermoplastic fiber core material and a continuous fiber sheath surrounding the continuous thermoplastic fiber core material, the continuous fiber sheath being formed from a sheath material selected from the group consisting of nylon 6, nylon 6,6, nylon 4, nylon 6,10, nylon 11, and nylon 12, and copolymers thereof, the fibers collectively defining tortuous fluid flow paths through the fluid transmissive body, the fiber structure being configured for controlling flow of the analyte fluid through the fluid transmissive body.
12. A bicomponent fiber wick according to claim 11 wherein the continuous thermoplastic fiber core material comprises at least one of nylon 6, nylon 6,6, polyethylene terephthalate, polybutylene terephthalate, polypropylene terephthalate, polylactic acid, polypropylene and polyethylene.
13. A bicomponent fiber wick according to claim 12 wherein the fiber structure is adapted to provide a predetermined polyamide component ratio.

14. A bicomponent fiber wick according to claim 13 wherein the predetermined polyamide component ratio is in a range of about 0.10 to about 0.50.
15. A bicomponent fiber wick according to claim 13 wherein the predetermined polyamide component ratio is in a range of about 0.20 to about 0.35.
16. A bicomponent fiber wick according to claim 13 wherein the predetermined polyamide component ratio is in a range of about 0.25 to about 0.30.
17. A bicomponent fiber wick for use in processing an analyte fluid, the bicomponent fiber wick comprising:  
a self-sustaining fluid transmissive body formed from a plurality of bicomponent fibers bonded to each other at spaced apart contact points, the bicomponent fibers collectively defining tortuous fluid flow paths through the fluid transmissive body, wherein each bicomponent fiber has a fiber structure comprising first and second fiber components, each having discrete cross-sectional areas extending continuously along the length of the bicomponent fiber, the first fiber component being formed from a polyamide material, the fiber structure being adapted to provide a predetermined polyamide component ratio equal to a ratio of first fiber component weight per unit volume to overall fiber weight per unit volume.
18. A bicomponent fiber wick according to claim 17 wherein the polyamide material is selected from the group consisting of nylon 6, nylon 6,6, nylon 4, nylon 6,10, nylon 11, and nylon 12, and copolymers thereof.
19. A bicomponent fiber wick according to claim 17 wherein the second fiber component comprises at least one of nylon 6, nylon 6,6, polyethylene terephthalate, polybutylene terephthalate, polypropylene terephthalate, polylactic acid, polypropylene and polyethylene.
20. A bicomponent fiber wick according to claim 17 wherein the first fiber component forms a continuous bicomponent fiber sheath along the length of the bicomponent fiber and the second fiber component forms a continuous bicomponent fiber core surrounded by the sheath.

21. A bicomponent fiber wick according to claim 17 wherein the analyte fluid is one of urine, blood, serum and saliva.